



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: TAUBER et. al

Application Serial No.: 10/785,510

Application Filed: February 17, 2004

Attorney Docket No.: CECOM 5522

For: RARE EARTH METAL COMPOUNDS FOR USE IN HIGH CRITICAL
TEMPERATURE THIN FILM SUPER-CONDUCTING ANTENNAS

AMENDMENTS TO THE CLAIMS

Sir:

In accordance with the enclosed Remarks, please amend the claims in the above-identified application as follows:

1-47 (Canceled)

48. (Currently Amended) ~~An~~ A high T_c superconducting antenna, comprising:

a single layer of a copper oxide superconductor deposited onto a single crystal substrate

of the formula Sr_2LuSbO_6 ;

said single crystal substrate being heated for at least 20 hours at ~~between 1400° C and~~
1600 ° C;

said single crystal substrate being constructed in a bulk form;

said single crystal substrate having an ordered perovskite cubic crystalline structure;

said single crystal substrate having a low dielectric constant of 15.1;

said single crystal substrate having a low dielectric loss of less than 1×10^{-3} without a
phase transition;

said formula including an Sb^{5+} constituent atom with a polarizability of about 1.2 \AA^3 ; and

said single layer of the copper oxide superconductor being patterned to complete the
device.

49-79 (Canceled)

80. (Currently Amended) A high T_c superconducting~~An antenna device~~, comprising:

a single layer of a copper oxide superconductor deposited onto a substrate;

said substrate having a buffered layer with the formula $\text{Sr}_2\text{LuSbO}_6$;

said buffered layer being heated for at least 20 hours at ~~between 1400° C and~~ 1600 ° C;

said buffered layer having an ordered perovskite cubic crystalline structure;

said buffered layer having a low dielectric constant of 15.1;

said buffered layer having a low dielectric loss of less than 1×10^{-3} without a phase

transition;

said formula including an Sb^{5+} constituent atom with a polarizability of about 1.2 \AA^3 ; and

said single layer of the copper oxide superconductor being patterned to complete the device.